JANUARY
1969
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Live Steam

THE MONTHLY MAGAZINE FOR ALL LIVE STEAMERS AND LARGE-SCALE MODEL RAILROADERS

Restoration begins for Northern Pacific Steam Rotary #2

Live Steam
magazine

JANUARY 1969 VOL. 3 NO. 1

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COVER PHOTO

A Northern Pacific steam rotary plow and a plowed-out drift at Blum Cut west of Valley City, North Dakota, just after the spring blizzard of 1966. Photo by Olson Studio, Valley City, N. D.

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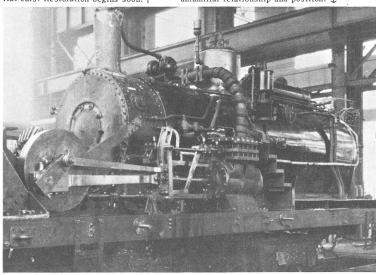
Northern Pacific Steam Rotary Will Continue

Fighting the Blizzards

by George J. Atchison

Northern Pacific Rotary #2 stands in Lake City after a trip from Superior aboard flat cars. Restoration begins soon. ↑

With the cab removed, a steam rotary shows all the familiar parts, but in an unfamiliar relationship and position. ↓



After 80 winters of clearing snowdrifts from the main line of the Northern Pacific Railway, Steam Rotary Snowplow No. 2 has been purchased by the Steam Railroad Restoration Society. It has been moved to central Michigan for preservation and exhibition as a part of an operating steam railroad museum being developed on rails leased from the Cadillac & Lake City Railway at Lake City, Michigan where it arrived January 9, 1969.

Northern Pacific Rotary No. 2 is a 62-ton, king size, snow blower designed to clear a ten-foot wide path through drifted and hard-packed snow. It was built in 1887 at Paterson, New Jersey by the Cooke Locomotive Works from plans supplied by O. Jull, John S. Leslie and Edward Leslie. The basic idea for the rotary snow plow was contained in U. S. Patent 297,408 issued to Mr. Jull on April 22, 1884, and the first full-size machine was built in 1885. After testing on several western railroads which encountered severe problems with blizzards and deep drifts on the great plains and in the western mountains, the original machine was completely rebuilt in 1886 to incorporate several improvements originated by the Leslie brothers and served as the prototype for all future models.

The steam rotary was highly successful from the start and over 140 were built in the United States and Canada. The last steam rotary to be manufactured in the United States was built by Lima-Hamilton Corporation at Lima, Ohio for the Soo Line Railroad in 1950.

As the early western railroads pushed their tracks across the plains states and into the western mountain ranges they encountered snow problems never before faced by railroad operating personnel. The wooden pusher snow plows were of little use in the deep drifts and snow blockades of days and even weeks were common each winter. The success of the early steam rotary plows attracted wide attention in railroad trade journals.

Northern Pacific Rotary No. 2 was purchased from Paterson, New Jersey in December, 1887. The Railroad Gazette of April 20, 1888 reported that the first two Rotaries to be acquired by the Northern Pacific (No. 1 and No. 2) were pushed to the Missoula Line over the Cascade Summit which had been blocked with snow drifts (in some cases 12 feet deep) for nine days. The switchback with seven miles long and grades of nearly 300 feet to the mile. The Rotaries cleared the line in less than nine hours and kept it open for the rest of the winter without delay to traffic. The Railroad Gazette of October 12, 1888 carried a report of the latest form of the Leslie Rotary Snow Shovel and gave the following description of the machine:

A steel frame of heavy I beams is mounted upon two four-wheeled diamond trucks, the whole construction being of extra strength. This frame carries a large locomotive type boiler with a fire-box which extends the full width between the wheels. This boiler supplies steam to two 17 x 22 cylinders with Walschearts valve motion. Each cylinder works a short shaft on which is fast a bevel wheel, 33 inches in diameter, to the pitch line. These bevel wheels gear into a larger bevel wheel, 49-5/8 inches in diameter, on the pitch line, fast on the main shaft driving the knife wheel placed in the front of the machine. This wheel is 9 feet in diameter, and is set in a round casing with a flaring square front 10 feet wide and the same height. This casing serves to feed the snow into the wheel from the corners of the cut. The wheel contains an inner and outer series of knives. These knives are pivoted on radial pins, and the surfaces of the knives being inclined to one another, the knives are canted when they encounter any snow, and are set so as to slice it off and feed it into the machine. Behind these knives and on the same shaft is a fan wheel composed of a number of radial blades. As the whole wheel is revolved at considerable velocity the centrifugal force causes the snow to fly to the outside of the fan wheel, and as the latter is surrounded by a casing the snow can only escape where an opening is provided for it. This opening is at the top of the wheel immediately behind the headlight. The opening is provided with a movable hood, so that the stream of snow can be regulated, and made to fly either to the right or left of the track.

The boiler and engines are protected from the weather by a strong house.

The rotary is under the charge of a pilot, who stands on a platform immediately above the bevel wheels and in front of the smokebox. By a system of signals he controls the engineers on the rotary and pusher, and by a hand wheel can alter the position of the hood that directs the stream of snow to either side. He has also charge of the ice breaker and flanger for cleaning the rails after the main body of the snow has been removed by the rotary.

The ice breaker is a stout blade of steel, hanging in front of the front wheel of the front truck, and so attached to the forward box and frame of the truck that it rises and falls with the movement of the front truck wheels, and consequently maintains a fixed position – about ½ inch – above the top of the rail. The ice breaker and the flanger which follows it can be raised several inches above the track by means specially arranged for this purpose and described below.

The flanger, which clears out snow from both sides of the rail for a distance of about 12 inches, is attached in a somewhat similar manner in front of the rear wheel of the front truck.

The eight-wheeled car as above described is followed by a tender carrying water for the supply of the boiler. These two vehicles are propelled into a snow bank by one or more locomotives, as may be required, according to circumstances.

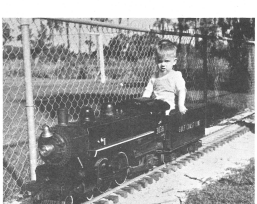
The battles against snow on the railroads which cross the western mountains are the subject of a recent book entitled SNOWPLOW by Gerald M. Best, an author with a lifetime devotion to railroading. In his book, Mr. Best traces the development of railroad snow clearing equipment and methods from the hand shovel to the steam rotary.

The Steam Railroad Restoration Society is a non-profit corporation chartered by the State of Michigan and authorized to preserve, preserve, restore, exhibit, and operate steam era railroad equipment for educational and museum purposes. Membership presently consists of 11 dedicated steam fans who have contributed the funds to purchase and move Northern Pacific Rotary No. 2 from the Superior, Wisconsin terminal of the Northern Pacific Railway to Lake City. Ages of the members vary from a college student to a retired businessman, and included a machinist, locomotive engineer, corporate executive, railroad president, architect, mechanical engineer and radiation chemist.

Mr. Carlton Johnson of Lake City will act as supervisor of the restoration work and operation. He has had extensive experience in restoring steam traction engines and steam locomotives including his personal 30-ton 0–4–0T steam locomotive. Future plans of the organization include a complete restoration of the Rotary with occasional operation to demonstrate how a steam rotary railroad snow plow works.

New Year's Celebration - Florida Style

Photos and report by Enos W. Yoder



1

About seventy-five persons gathered on New Year's Day at Enos Yoder's track in Sarasota, Florida. Enos Yoder's 1" scale Little Engines Atlantic (1) was the largest engine operating and his grandson, Kirby Keim, posed as engineer as Grandpa took the pictures.

A scaled-down Maine Two-Footer being built by Larry Smith (2) of West Hollywood, Florida, made its first run at the meet. This well-built 2-4-4T steamed well considering the lack of lagging. In the background is William Yoder's unfinished Reading

2

4-4-0 #400 in ¾" scale.

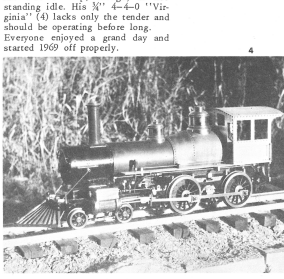
An example of what can be done by Americanizing an English design is Col. Douglas Peck's 0-4-0T (3) in ¾" scale. The engine began as a "Juliet" and did see quite a bit of running during Col. Peck's service in England. It broke all speed records for the day!

Mr. Peck's shop, though, is not standing idle. His ¾" 4-4-0 "Virginia" (4) lacks only the tender and should be operating before long.

Everyone enjoyed a grand day and started 1969 off properly.

3

4



Pensacola Live Steamers enters second active year

Since its organization in September 1967 and its Charter dated February 4, 1968, this club has made quite a bit of headway for such a comparatively small group.

Jim Fannin (Machinist) and son Albert (Student) have a 1'' scale Pacific running on 350' of track around their home and a 1'' 2–8–2 about 60% complete plus two stationary engines and a boiler to operate them. Jim, incidentally, is club President and has just been re-elected to his second term in that office. He is truly the "prime mover" in the club and keeps things well motivated. Dr. C. A. Asters(who, with all the machinery he owns, should be a machinist instead of a surgeon) has a 1½'' 0–4–0T and a stationary engine under-construction. Art Olds (in the refrigeration business) is building a 1'' scale 1900 vintage 2–8–0. Al Keyser (Communications Engineer) is building a 1½'' scale 4–4–0 *General* to complement his two beautifully built stationary engines. Bob Harrison (Airframes Mechanic) is building a 1½'' scale 2–4–2T *C. P. Huntington*. Luther Arant (our Post Office representative from Foley, Alabama) has a 1'' scale 4–6–2 under construction – a beautiful locomotive with meticulous workmanship. Oz Green (Navy Airframes Mechanic) is working on a 1½'' scale 0–4–0 *Tom Thumb*. N. P. Christensen (retired School Teacher) has a ½'' scale Case traction engine operating and a 1'' scale 4–8–4 under construction. Frank Orr (Navy Navigation Instructor) took the members for a ride in his 24-foot steam launch powered by a double-expansion "V" engine after the last meeting. He also has several stationary engines in various stages of completion. Bumps Metrolis (retired Naval Aviation Pilot) is working instrument flying in Army helicopters) has two Stuart engines, a horizontal mill and a two-cylinder vertical engine driving a generator operating from one boiler. He has just received castings to start building a double expansion engine. Thurman Walker (Heavy Equipment Operator) is building a stationary engine.

Through the good graces of Dr. Asters the club has obtained some land where the members are kept busy clearing, cleaning and leveling to build a club track and clubhouse. They hope to find a surplus caboose to use as a clubhouse. Six-hundred feet of track have been acquired and plans include a 600-foot loop with three rails to accommodate 1'' and 1½'' equipment.

Interested persons are cordially invited to visit and join in the activities with the club. Meetings are held on the second Sunday of each month at a member's home or at the warehouse near the club site. Further information can be obtained by contacting the club President, Jim Fannin at 2218 W. Moreno St., Pensacola, Florida 32505, phone 904 – 432-4861.

Canadian National caboose drawing clarification

In the October issue of LIVE STEAM, the New Products columns carried an item about caboose drawings offered by William Dykeman of Bathurst, New Brunswick, Canada. These are not drawings for a ¾'' scale caboose as some have apparently interpreted them to be. They are side and end elevations; longitudinal, horizontal and cross sections of a full-size wood sheathed Canadian National caboose drawn to ¾'' scale by the Mechanical Department of the CNR. They are on one blue-printed sheet about 28'' x 38'' and are well detailed and dimensioned. The blue print is available for $2.50 in funds of the country in which the order originates from William Dykeman, 890 Bay Avenue, Bathurst, N.B., Canada.

It's official now - Colorado Live Steamers

Twenty-two Live Steamers met on January 19th, 1969, at the home of Kent Bolerjack in Englewood, Colorado, and voted to organize as the Colorado Live Steamers. It will be an informal club with emphasis on running and talking Live Steam. They will follow the LALS standards and track and wheels and agree that boilers should be tested once a year at 50% above pop-off pressure and no higher. They will meet every third Sunday of the month at Kent Bolerjack's house until late spring and then the monthly meetings will rotate around the circuit of member's tracks.

Other clubs will be contacted about the "do's-and-don't's" of club tracks and these factors considered before making a start on their own club track, probably in the Spring of 1970. In the 22 who attended the first meeting and another 5 or 6 who couldn't make it, they have about 20 engines finished or scheduled for completion by this summer.

If you didn't make that first meeting and want to know more about the club, contact R. Kent Bolerjack, 3228 W. Tufts Ave., Englewood, Colorado. He will be able to fill you in on the details.

Free steel bar ends to LIVE STEAM readers

Down through the years, Sierra Swiss Products has accumulated quite a lot of alloy and tool steel bar ends as well as special hex bar ends in mild steel and stainless. They run from four to nine inches long and are worth very little when sold to scrap yards. Some are centerless ground and have a fine finish suitable for all sorts of pins, rods, axles, etc. Most of it is free-machining, being leaded or with small amounts of Tellerium added. Some is heat treated to 125 Mpsi and can be further heat treated (torch hardened) to 250 Mpsi.

Bob Leonard, who operates Sierra Swiss, estimates that there is about 1000 to 1500 pounds of the material and offers it to his Minibolts customers on the basis of one pound of bar ends free with each $2.00 worth of Minibolts. It is offered F.O.B. the plant and all on a "pot luck" basis although a customer may state his preference. The only expense involved is a few cents parcel post charge and there is no additional charge for packing with your order. All you have to do is mention the free offer in LIVE STEAM magazine when you order your Minibolts. Better stock up now!

Addenda available for Locomotives Of The NYC

In an effort to make their book, *Locomotives of the New York Central Lines*, as complete and factual as possible, William Edson and Edward May have prepared an addenda providing additions, deletions and corrections to their first edition which was printed in 1966.

If you have purchased a copy of their book, you can obtain the addenda by writing to

William D. Edson
10820 Gainsbrough Road
Potomac, Maryland 20854

and making your request.

For those students of the vast New York Central system and the countless companies that formed its beginnings . . . or for anyone looking for basic dimensional data on locomotives of all vintages, this book is a most valuable reference. It is still available from LIVE STEAM Magazine for $4.95.

Big Steamup planned in Windsor

The track has been completed and Live Steamers in Windsor keep looking for the "next sheet on the calendar" to appear. Hoping for an early spring is on the minds of all of the group so they can finish up the work on their new steaming bay. The last of the ¼" x 5/8" hot rolled steel rails have been pressed into the slotted ties and the 3½" and 4¾" gauge tracks are ready.

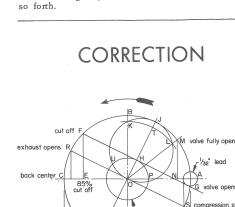
July 12th and 13th will be the Grand Opening of the new Ontario Sunparlor Lines track in Windsor, Ontario, and Jack Hart – Secretary says, "Let's all get together for a Big Steamup and try out the new track here in Windsor on July 12th and 13th."

Sounds like a great idea!

Frontenac Society of Model Engineers formed

Last summer a group of Live Steamers met near Kingston, Ontario, to witness the opening of a new multi-gauge track of Edward Phipps-Walker and, as so often happens, each individual Live Steamer was surprised to see the amount of interest in *his* hobby. As a result, ten interested model engineers in the Kingston area have formed the Frontenac Society of Model Engineers and put out the call for any others in their vicinity who might be interested in club activity. Please contact Peter W. Harrell at 643 Johnson Street in Kingston, Ontario if you would like to meet with these men. He can give you further details about meetings and so forth.

CORRECTION



VALVE DIAGRAM – TYPICAL PROTOTYPE

On page 9 of the November 1968 issue of LIVE STEAM is a drawing "VALVE DIAGRAM-TYPICAL PROTOTYPE" which, unfortunately did not include all of the key letters. Joseph F. Nelson, the author, points out that we omitted the letters D, H and U in making up the inked drawing. Our apologies . . . and the corrected drawing is printed herewith.

Pattern Pool issues longer list of patterns

Increased interest in the Pattern Pool by Live Steamers has made necessary a new list of the items available. New items include parts for many locomotives and cars in 1½", 1", 3/4" and ½" scales as well as patterns for castings needed to build a Corliss Stationary engine. If you are in the process of building Live Steam equipment you should have a copy of the new List #7 which can be obtained for 25¢ and a 12¢ stamped, self-addressed envelope from the Eastern Live Steamer Pattern Pool, 962 Greenland Road, Portsmouth, New Hampshire 03801.

Scheduled Meets

Regular Run Days

GOLDEN GATE LIVESTEAMERS
Every Sunday, weather permitting
7½" – 3½" – 4¾" – 7½"
George French, Secretary
614 18th Avenue
Menlo Park, Calif. 94025

JAMUL VALLEY RAILROAD
3rd Sunday of each month
7½" gauge
Harry F. Haas
Route 1, Box 47 A
Jamul, California 92035

LOS ANGELES LIVE STEAMERS
1st Saturday–Sunday each month
3½" – 4¾" – 7½"
Joel Corbin, Secretary
12723 Kittridge Street
North Hollywood, Calif. 91606

RIVERSIDE LIVE STEAMERS
4th Saturday–Sunday each month
7½" gauge
Francis H. Smith, Secretary
P. O. Box 5512
Riverside, California 92507

SOUTHERN CALIFORNIA LIVE STEAM CLUB
3rd Sunday each month
3½" – 4¾" – 7½"
K. G. Kepner, Secretary
2764 Maple
Rialto, California 92376

April

11 **MID-SOUTH LIVE STEAMERS**
12 Spring Meet
13 Austin F. Barr Track
7½" gauge
Jct. Hwys. 1 & 214
at Whitehall, Arkansas
RFD 2, Harrisburg, Arkansas

12 **CHICAGO MODEL ENGINEERS ASSOCIATION**
20 Annual Exposition
Museum of Science & Industry
Bill Holt, Secretary
8332 S. Hamilton Ave.
Chicago, Illinois 60620

May

18 **NORTHERN ILLINOIS LIVE STEAMERS**
David M. Boyd's Track
3½" – 4¾" gauge
315 Ridge Avenue
Clarendon Hills, Ill. 60514

June

7 **IOWA MODEL STEAM ENGINEERS**
8 Annual Spring Meet
3½" – 4¾" – 7½" gauge
Pershing G. Scott, Secretary
R.F.D. 1
Marion, Iowa 52302

July

12 **ONTARIO SUNPARLOR LINES**
13 Grand Opening
3½" – 4¾" gauge
Jack Hart, Secretary
1381 Shepherd Street
Windsor, Ontario, Canada

September

6 **IOWA MODEL STEAM ENGINEERS**
7 Annual Fall Meet
3½" – 4¾" – 7½" gauge
Pershing G. Scott, Secretary
R.F.D. 1
Marion, Iowa 52302

LOS ANGELES IN 1970 NATIONALS MEETING

BROTHERHOOD OF LIVE STEAMERS

MAY 29-30-31 1970

PART FOUR

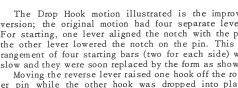
VALVE GEAR

EARLY VALVE MOTIONS THAT LED TO THE STEPHENSON (Continued)

DROP HOOK

The Drop Hook motion illustrated is the improved version; the original motion had four separate levers. For starting, one lever aligned the notch with the pin, the other lever lowered the notch on the pin. This arrangement of four starting bars (two for each side) was slow and they were soon replaced by the form as shown.

Moving the reverse lever raised one hook off the rocker pin while the other hook was dropped into place; starting bars (not shown) still moved the valve stem into

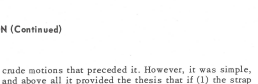


DROP HOOK

position. The drop hook eventually was replaced by the V-hook because of the tendency of the pin and hook to become disengaged at high speed.

STEPHENSON DOUBLE V-HOOK (1841) (GAB GEAR)

This motion used the double V-hook with the eccentric rods (also called "eccentric blades") held in their relative respective positions by a connecting strap. They were lowered for "ahead" and were raised for "reverse" by a hanger on the lift arm. As far as variable cut-off was concerned, it was no better than the crude motions that preceded it. However, it was simple, and above all it provided the thesis that if (1) the strap was replaced by a slotted curved link, and (2) the double



STEPHENSON DOUBLE V-HOOK ("GAB")

V-hook was replaced by a block sliding in the link, variable cut-off would be attained.

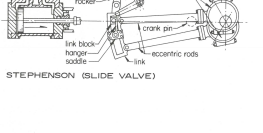
THE STEPHENSON LINK MOTION (1843)

The Stephenson Valve Motion was named for the British firm of Robert Stephenson & Company since it was not designed by Robert Stephenson but was developed by the company. Who actually envisioned the link motion has been lost in antiquity but it is assumed that an apprentice draftsman first thought up the motion and one of Stephenson's pattern makers worked out the practical details. This link motion was an enormous improvement over the clumsy hook motions of that period and since then it has been used on all types of steam engines.

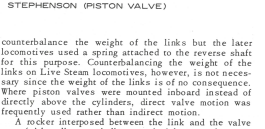
The Stephenson Link Motion uses two eccentrics for each valve, one for forward motion of the engine and one for reverse. The eccentrics and links are normally mounted between the locomotive frames and it is customary to mount the eccentrics on the main axle. There have been exceptions, however, where the Stephenson has been mounted outside the frame. The Anderson was

an outside version of the Stephenson which used a two-pin return crank in place of eccentrics. By mounting the valve motion outside on multi-drivered locomotives, the eccentric blades and transmission bar could be straight rather than be bent to clear axles which was necessary on inside mounted Stephenson motions.

Links should be supported at their centers by link saddles since the link centers have the shortest movement. Due to space limitations, the link hangers are of necessity short. This can cause unequal valve events if the links are supported at any other point except center, particularly if the reverse shaft arms are not carefully located in relation to the fore-and-aft motion of the links. Early locomotives used a counterweight to



STEPHENSON (SLIDE VALVE)



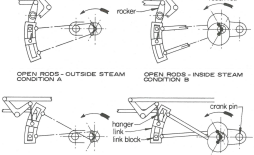
STEPHENSON (PISTON VALVE)

counterbalance the weight of the links but the later locomotives used a spring attached to the reverse shaft for this purpose. Counterbalancing the weight of the links on Live Steam locomotives, however, is not necessary since the weight of the links is of no consequence. Where piston valves were mounted inboard instead of directly above the cylinders, direct valve motion was frequently used rather than indirect motion.

A rocker interposed between the link and the valve stem (either direct or indirect motion) has an advantage of unequal length rockers. Unequal length rockers permit long valve travel with short eccentric throw. This permits the outside diameter to be smaller than if equal movement was used on both sides of the rocker.

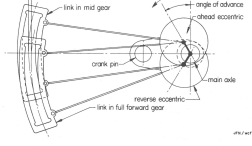
OPEN RODS AND CROSSED RODS

Open rods and crossed rods are no problem for the locomotive builder since, when building a conventional locomotive, the builder will automatically get open rods without even trying. Since open rods have the desirable characteristics and crossed rods have the undesirable characteristics, some explanation should be given. While the problem doesn't affect the locomotive, it can pop out on vertical engines and when they are used on *Tom Thumb* type locomotives. It must be remembered, too, that quite a few of the Live Steam fraternity do build stationary engines.



OPEN AND CROSSED ECCENTRIC RODS

With eccentricity toward the links, the eccentric rods are "open" when arranged as shown in conditions "A" and "B" and "crossed" when arranged as shown in "C" and "D". Also note that open rods match the crank rotation as the links are moved into full gear and that crossed rods go against crank rotation as the links are moved toward full gear. In full gear the valve motion is the same for open as for crossed rods but as the gear is hooked up the effect on the valve function is materially different. By laying out a curve of valve functions, it will be found that open rods will show a greater range of cut-off with a smaller reduction of port opening than with crossed rods. As the gear is hooked up with open



LEAD INCREASE AS LINK IS MOVED TOWARD CENTER

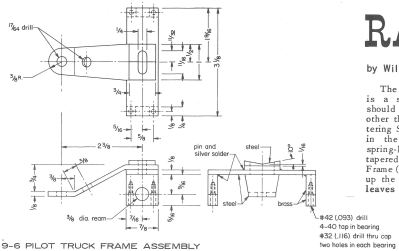
rods, the lead increases; with crossed rods it decreases and may become negative. Hooking up with crossed rods decreases the valve travel very rapidly with consequent reduction of both steam and exhaust port opening and, therefore, crossed rods are not as well adapted to expansive working as open rods. Shorter eccentric rods augment this effect and longer eccentric rods diminish this effect.

pilot truck

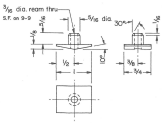
building the RARITAN

by William H. Morewood

The Pilot Truck Frame Assembly is a straight forward project that should require no special emphasis, other than to mention that the Centering Sleeve (9–7) rides on the pin in the Pilot Plate (9–9) and is spring-loaded down against the tapered surface on the Pilot Truck Frame (9–6). Its purpose is to center up the Pilot Truck after the engine **leaves a curve.**

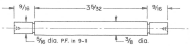


9-6 PILOT TRUCK FRAME ASSEMBLY
1 required

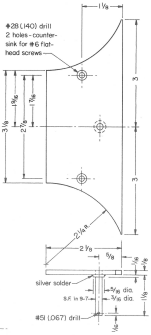


9-7 CENTERING SLEEVE
Brass - 1 required

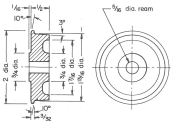
9-8 SPRING
1 required



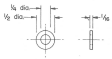
9-10 PILOT AXLE
Steel - 1 required



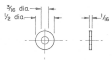
9-9 PILOT PLATE
Steel - 1 required



9-11 PILOT AND TENDER WHEEL
Cast Iron - 10 required



9-12 WASHER
Brass - 1 required



9-13 WASHER
Brass - 1 required

mail stop

STAINLESS STEEL BOILERS O.K.

The letter from Douglas Alkire in the *mail stop* column (LS 10/68) was very interesting since my 1½" scale Heisler has a stainless steel boiler made from 304 low-carbon stainless. I have always used tap water and the water department advises that the last test showed the water contained 13 parts clorides per million.

I made the boiler six years ago and have been using it the last five years. Last spring I tested it at 345 lbs. p.s.i. I have a small track in my back yard with 15 foot radius and 2 tracks that go into the garage so it is very easy to fire it up at any time. During the summer I fired at least four hours a week.

The State of Wisconsin says 100 lbs. p.s.i. is the maximum pressure for miniature boilers. The Wisconsin Code also lists 304 stainless O.K. for boilers as long as it has a six-times stress factor.

I work for Kimberly-Clark Corporation which uses a lot of stainless for piping. I showed the article to an engineer that has a lot to do with the stainless that they use. He said there was not much that he could add to your article. The only problem they had was when they used some stainless with high carbon. The welds didn't crack but next to the welds cracked. This is not stress corrosion. He said not to anneal the stainless because this cracking is caused when the stainless is held at 1200° or higher for any length of time.

At present I'm building an 0–6–0 in 1½" scale. The boiler is 7½" I.D. from 304 low-carbon stainless with 24 tubes ½" O.D. with a .028 wall. I roll the tubes in so that the boiler does not have to be heated for silver soldering. In my Heisler I burn petroleum coke. I figure my Heisler evaporates 1 cu. in. of water every 7 feet of track which is about the same as a 1½" scale Atlantic with a 9" boiler. I feel that this proves that stainless is O.K. for boilers.

HAROLD EVERSON
224 N. RANKIN STREET
APPLETON, WIS. 54911

COPPER TUBES IN STEEL BOILERS

I need information about copper tubes being put into steel boilers. Is it advisable? How is it done? What are the results? Any particular difficulties?

I plan to build the P&LE 9400 2–8–4 in 1½" scale and would like to consider using the steel boiler with copper tubes.

CLYDE L. JOHNSON
444 LEVEE ROAD
PITTSBURG, CAL. 94565

WOULD-LIKE-TO-SEE DEPARTMENT

Would like to see more of "how-to-do-it" keeping in mind the fellow of limited equipment, especially without a milling machine and planer.

VICTOR STOLPER
1836 MCKNIGHT ROAD
ST. PAUL, MINN. 55109

I have enjoyed this past year's LIVE STEAM very much but I have seen nothing on the scale in which I am working – ¼". I am building a ¼" scale Hudson from Little Engines castings but I have never seen a completed engine in this scale nor a picture of one, even in the Little Engines catalog.

How about some pictures or an article on this scale in the magazine?

DONALD D. GARLOW
POST OFFICE BOX 124
HYDESVILLE, CALIF. 95547

MISTAKEN IDENTITY

'Twas enjoyable to see the picture of myself and my *Lion* in the spread on GGLS in LIVE STEAM for November. However, the owner of the little vertical boiler engine doubleheading with mine is not Marvin Weber (whose picture appears elsewhere on the same page) but Ed Buellmann of Los Angeles Live Steamers. While doubleheading we were hauling four and five car trains of 25 to 40 passengers.

It might be of interest to the readers to know that at the GGLS Spring '68 Meet, my *Lion* was kept under steam and running for a solid 12 hours; at the Fall '68 Meet it was operated all night long. Certainly a tribute to the craftsmanship of her builder, Bill Brower of Orinda, California!

GEORGE R. BROAD
212 12TH AVENUE
SAN MATEO, CAL. 94402

Many thanks for the excellent coverage on the activities on Mr. Phipps-Walker's track at Kingston in LIVE STEAM for October. Would you be so kind as to make the following corrections: the 0–6–0 referred to is actually a 2–6–0 Mogul and is owned by Henry Moxon of Peterborough, Ontario, rather than Henry Moxley as we reported.

Many thanks to you and your coworkers.

PETER W. HARRELL
643 JOHNSON STREET
KINGSTON, ONTARIO, CAN.

(NOTE: In the same article the reference to a speed record by a ¾" scale Heilan' Lassie was a misinterpretation of the data. The 20–25 mph applies to the 8" gauge 4–4–0 while the Heilan' Lassie would perform in the neighborhood of 7–9 mph. Ed.)

NYC HUDSON IN ITALY

We have joined together a batch of enthusiasts of the model steam hobby and construction of a NYC 3j Hudson in 1½" scale is only a question of time, but a sure thing. At my country house (an old four-turrett mansion) we have organized a large room to erect the loco and outdoors there is room enough for the 3ja to negotiate the curves.

Please put me in contact with any Live Steamer who has under construction or is planning to build a 1½" scale, 7¼" gauge NYC 3ja Hudson. Thank you very much.

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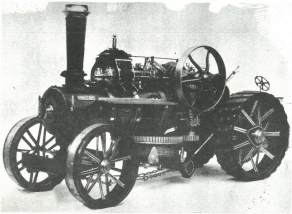

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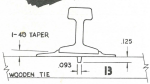

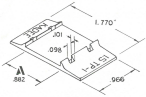

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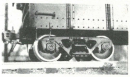

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